

Title (en)

COLOR-TUNABLE TRANSMISSION MODE ACTIVE PHOSPHOR BASED ON III-NITRIDE NANOWIRE GROWN ON TRANSPARENT SUBSTRATE

Title (de)

AKTIVES PHOSPHOR MIT FARBABSTIMMBAREM ÜBERTRAGUNGSMODUS AUF BASIS VON III-NITRID-NANODRAHT, DAS AUF EINEM TRANSPARENTEN SUBSTRAT GEZÜCHTET WURDE

Title (fr)

LUMINOPHORE ACTIF À MODE DE TRANSMISSION ACCORDABLE EN COULEUR BASÉ SUR UN NANOFIL DE NITRURE III CULTIVÉ SUR UN SUBSTRAT TRANSPARENT

Publication

EP 3563427 A1 20191106 (EN)

Application

EP 17832818 A 20171228

Priority

- US 201662439947 P 20161229
- IB 2017058476 W 20171228

Abstract (en)

[origin: WO2018122774A1] A system and method providing correlated color temperature-tunable (CCT- tunable) white light using a laser diode(s) in conjunction with a III-Nitride nanowires- based LED element grown on a semi-transparent substrate. The tunability spans across yellow, amber, and red wavelengths and can be implemented by current injection. The current-dependent broad wavelength tunability enables control of wide range of CCT values (intensity, peak wavelength, and spectral coverage). The broad coverage in the yellow-amber-red color regime mimics that of a passive yellow phosphor, while the injection of current into the LED element defines an active phosphor element. The semi- transparent active phosphor element allows direct transmission of light from a laser diode(s) for achieving extreme wide tunability of CCT.

IPC 8 full level

H01L 33/16 (2010.01); **F21K 9/64** (2016.01); **H01L 33/50** (2010.01)

CPC (source: EP US)

F21K 9/62 (2016.07 - US); **F21K 9/64** (2016.07 - EP US); **F21K 9/68** (2016.07 - US); **F21K 9/69** (2016.07 - US); **G02F 1/017** (2013.01 - US); **H01L 27/153** (2013.01 - US); **H01L 33/16** (2013.01 - EP); **H01L 33/24** (2013.01 - US); **H01L 33/36** (2013.01 - US); **H01L 33/507** (2013.01 - EP); **F21Y 2113/13** (2016.07 - US); **F21Y 2115/30** (2016.07 - US); **G02F 2202/108** (2013.01 - US); **H01L 33/06** (2013.01 - US); **H01L 33/32** (2013.01 - US)

Citation (search report)

See references of WO 2018122774A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

WO 2018122774 A1 20180705; EP 3563427 A1 20191106; EP 3563427 B1 20210623; EP 3886186 A1 20210929; US 10884268 B2 20210105; US 11106059 B2 20210831; US 2020117027 A1 20200416; US 2021116725 A1 20210422

DOCDB simple family (application)

IB 2017058476 W 20171228; EP 17832818 A 20171228; EP 21174179 A 20171228; US 201716471789 A 20171228; US 202017111639 A 20201204